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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/873,561	06/04/2001	Jim R. Roth	ICR CO97/011	7603

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EXAMINER

BHAT, NINA NMN

ART UNIT

PAPER NUMBER

1764

DATE MAILED: 09/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/873,561

Applicant(s)

ROTH ET AL.

Examiner

N. Bhat

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-12, 14 and 15 is/are rejected.
- 7) ☒ Claim(s) 6 and 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 9 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Moser, Jr. et al.

Moser, Jr. et al. teach a coke drum wherein the coke drum comprises a substantially closed interior, a top portion of the drum having an aperture there through, an overhead vapor outlet nozzle and a cyclone which is functionally equivalent to applicant's deflector for deflecting solids and heavy hydrocarbon liquid from exiting the interior of the coke drum. Note Figure 1, element 13 and 15 and Column 3, lines 13-23.

3. Claims 1, 9 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Allan et al.

Allan et al. teach a coke drum or coker unit which includes a vapor phase coking zone which may comprise a small amount of entrained solid, which flows into the cyclone to be separated with the vapor phase from the coker unit. A baffle 42 is positioned to decrease the vapor residence time and to prevent coke from depositing on the inner walls of the coker unit. From the figure, the coke drum comprises a substantially closed interior; a top portion of the drum having an aperture there through and overhead vapor outlet nozzle a baffle and cyclone both the baffle and cyclone functions equivalently to applicant's deflector for deflecting solids and heavy

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hydrocarbon liquid from exiting the interior of the coke drum to improve the efficiency of the coker unit.[Note the figure and Column 3, lines 64-67 and Column 4, lines 1-16]

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 2-5, 7-10, 10-12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moser et al.

Moser et al. teaches the invention substantially as claimed. Moser et al. teach a coke drum and coking process and coke drum which includes a substantially closed interior; a top portion of the drum having an aperture there through; an overhead vapor outlet connected to the aperture and a deflector for deflecting solids and heavy hydrocarbon liquid from exiting the interior of the drum through the aperture.

Specifically Moser et al. teach that the vapor from the coker is passed through cyclone (13) to remove entrained solids, which are returned to the coker through dipleg (14).

the vapors leave the cyclone through line (15) and pass into the scrubber fractionater

(16) where they are fractionated to gas leaving by line (17), naptha by line(18) and gas oil by line (19). The fine solid particles which pass through the cyclone is returned to the coker.[Note column 3, lines 10-24 and Figure 1] Moser et al. uses a cyclone instead of a deflector plate or cone which but functionally equivalently to applicant's deflector plate, that being deflecting solids and heavy hydrocarbon liquid form exiting the coke drum into the fractionater. Admittedly the cyclone is a more elaborate means than using a planar metal plate or cone as claimed by applicant and Moser et al. does not teach specifically if the cyclone can be removably attached. Moser et al. does teach the basic concept of applicant's invention, which is providing a cyclone, or deflecting means, which reduces and/or deflects the solids and heavy liquids from entering the fractionator and permitting further reaction within the coker unit thereby increasing the efficiency. To provide the deflector as merely a baffle or metal plate where a cyclone has been taught would have been obvious the cyclone is more complicated than using a metal deflecting plate however the function is the same thus to replace the cyclone with a deflector plate or baffle in order to deflect the solids and heavy liquids from exiting the coker drum would have been obvious to one having ordinary skill in the art at the time the invention was made thus rendering applicant's invention as a whole obvious. With respect to the positioning or location of the deflector from the aperture within the coke drum, this would have been obvious to one having ordinary skill in the art at the time the invention was made because a cyclone not only will deflect the particles from the vapor stream the cyclone employed also effects the residence time and the flow of vapor out of the coker drum and to position the cyclone or deflector plate in a coker drum which

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provides optimum residence time, efficient flow through the system and overall improvement of the coke process would have been obvious to one having ordinary skill in the art the placement and location of baffles, cyclones, deflectors are obvious design choice parameters which would have been obvious to one having ordinary skill in the art of hydrocarbon processing, coker unit design and basic chemical engineering process design.

7. Claims 6 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims because the prior art fails to teach or suggest providing a deflector which forms a cone having an apex centered with and pointing toward the aperture in the coke drum and wherein the aperture is connected to the overhead vapor outlet nozzle.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tuttle teach a method coking and cracking petroleum residues. Graf et al. teach a flash zone draw tray for Coker fractionation. Hraban et al. teach a process for upgrading the flash zone gas oil stream for a delayed coker. Najjar et al. teach a partial oxidation process of a feedstock comprising petroleum coke. Godino et al. teach an apparatus for producing petroleum products in a coking process.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Bhat whose telephone number is 571-272-1397. The examiner can normally be reached on Monday-Friday, 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



N. Bhat
Primary Examiner
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